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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,639	07/17/2003	Robert Howard	C152 1160.1	1020

7590 07/01/2004

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EXAMINER

LIN, ING HOUR

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,639

Applicant(s)

HOWARD ET AL.

Examiner

Ing-Hour Lin

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0615.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 5-8, 11, 14-19, 22, 24-25, and 27-28, 33-35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafton et al in view of Beuret et al.

Crafton et al (col. 14, lines 58+; Fig. 6) teach the claimed casting system and method for producing metal castings: pouring a molten metal into molds at a casting station to form the castings; transferring the castings to an elevated drop-bottom furnace 111 equipped with lift means 116 including hooks 118 for engaging a casting support (basket) 40 of castings and heating

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means including electric and radiant heaters (col. 15, lines 23+) for heating the castings; opening the a sliding door 120 in the bottom of the furnace; depositing the castings in a fluidized bed chamber including a quench tank 148; and removing the castings from the chamber to the furnace after completion of heat treatment. Crafton et al fail to teach the use of a mobile furnace.

However, Beuret et al (col. 2, lines 19+) teach the use of mobile furnace equipped with rollers 8 such that the furnace can move on the track 9 (Fig. 4) for the purpose of effectively heat treating the casting and preventing heat lose between heat treatment station and casting station. It would have been obvious to one having ordinary skill in the art to provide Crafton et al the use of a mobile furnace as taught by Beuret et al in order effectively control the casting temperature between heat treatment station and casting station.

4. Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafton et al in view of Beuret et al and further in view of Laurino.

Crafton et al in view of Beuret et al fails to teach the use of a casting retractor.

However, Laurino (col. 3, lines 63+) teaches the use of a casting retractor (robotic grippers) 49a, 49b for the purpose of effectively retracting the casting from the mold (col. 4, lines 3+). It would have been obvious to one having ordinary skill in the art to provide Crafton et al in view of Beuret et al the use of a casting retractor as taught by Laurino in order to effectively retract the casting from the mold.

5. Claims 9-10, 20-21, 36-37, 40-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafton et al in view of Beuret et al and further in view of Barboni et al.

Crafton et al in view of Beuret et al fails to teach the use of a removable lid in claims 9-10 and 20-21 and multiple heat treatment chambers in claims 36-36 and 40-46.

However, Barboni et al (col. 3, lines 60+) teach the use of a removable lid 4b, 5b, 6b for the purpose of effectively covering the multiple heat treatment chambers. It would have been obvious to one having ordinary skill in the art to provide Crafton et al in view of Beuret et al the use of coupling the hook of the casting support with the removable lid as taught by Laurino in order to effectively reduce the cycle time of heat treatment.

6. Claims 12-13 and 26, 29-30, 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafton et al in view of Beuret et al and further in view of Cress.

Crafton et al in view of Beuret et al fails to teach the use of a thermal arresting unit.

However, Cress (col. 5, lines 45+) teaches the use of a thermal arresting unit for the purpose of effectively storing castings and preventing heat loss. It would have been obvious to one having ordinary skill in the art to provide Crafton et al in view of Beuret et al the use of thermal arresting unit as taught by Cress in order to effectively reduce heat loss of stored castings waiting for heat treatment.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crafton et al in view of Beuret et al and further in view of Cress and Barboni et al.

Crafton et al in view of Beuret et al and further in view of Cress fails to teach the use of a removable lid.

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However, Barboni et al (col. 3, lines 60+) teach the use of a removable lid 4b, 5b, 6b for the purpose of effectively covering the multiple heat treatment chambers. It would have been obvious to one having ordinary skill in the art to provide Crafton et al in view of Beuret et al and further in view of Cress the use of coupling the hook of the casting support with the removable lid as taught by Laurino in order to effectively reduce the cycle time of heat treatment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I.H.L.

I.-H. Lin

6-15-04

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